CBS NEWS - Apollo 13 Launch Coverage

https://www.youtube.com/watch?v=5mntGiDejBE (https://www.youtube.com/watch?v=5mntGiDejBE)

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From Saturday, April 11th, 1970 CBS NEWS Live coverage of the launch of Apollo 13.

- Coverage runs from 12:30 P.M E.T - 3:00 P.M E.T (Launch at 2:13:00 P.M E.T)

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out there on launch pad 39a John swagger is squeezed in between Jim Lovell and Fred Hayes and the cabin of Apollo 13 swagger got there after a week of uncertainty climax with his promotion to the prime crew replacing Ken Mattingly but today the uncertainty is gone the weather is reasonably good when the countdown ticking off for man's third voyage to the surface of the moment [Applause] [Music] CBS news color coverage of Aquarius on the moon flight of Apollo 13 today the launch of astronauts Lovell Swigert and Hayes sponsored by Western Electric the people who make telephones and communications equipment for the Bell System and the International Paper Company where good ideas grow on trees reporting from the CBS News Apollo headquarters at the Kennedy Space Center correspondent Walter Cronkite 2:13 one

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correspondent Walter Cronkite 2:13 one hour and 40 minutes from now they Apollo 13 is scheduled to blast off for the moon astronauts came out of the quarters where they live here at the Cape before takeoff for the moon earlier this morning at about 11 and 30 this morning they had gotten up at 9 o'clock they checked out and that last a quick examination for health nobody has come down with the measles again now the crew is scheduled to go there all said to be immune they had a good breakfast the usual steak and eggs for breakfast then they transferred to the transfer van in the scold made the drive to the spaceport to the moon port to the big rocket that will take them on the way toward the moon today the fifth such departure for the moon the third to attempt a landing on the moon they arrived at just 11:30 at the Apollo access arm up of the 320 foot level a Lovell entered the spacecraft first he sits in the far left-hand seat and then about six minutes later Fred Hayes a space rookie got into the spacecraft he sits over in the right-hand seat and then the man who didn't expect to be going to the moon today but one a trip by the fact that Ken Mattingly scheduled to be the command module pilot is susceptible to measles he might have gotten them in space so he was scrubbed from the mission and now Swaggart's going well he finally under the spacecraft to sit in the middle seat we're seeing the van on the road to before its actual arrival at pad 39a as it passes the Vehicle Assembly Building

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it passes the Vehicle Assembly Building said to be the largest building in the world in total cubic footage it's where they assemble these two are these Saturn spacecraft and then on the way to the launch pad itself Wally schirra is with me for our report today as he has been for these recent Apollo missions all of the Apollo missions since he himself took the first one out for us and found out that the Apollo spacecraft works and very well he's been helping us now since Apollo 11 wall-e it must be quite a thing for Jack's fire at this 38 year old fellow from Denver who was a backup command module pilot hadn't even been scheduled to make a flight eventually to the moon although anticipated the backup pilots usually get a chance a little later on I guess but he wasn't scheduled and then the middle of this last week why he he got the bid to make this ride there they are as they got to that 320 foot level that's probably the most exciting part of the whole thing that this phase of launch day where you go up to the XS om the enter that spacecraft of course the real the real real proof of whether you really have that right or not in this case where Jack is the substitute I should say a very good substitute is when those lifts or farms lift off alarms release then you know that's your right because there's no way of changing seats after that well he doesn't he won't be sure that for another a couple of hours yet but it looks like he's going to make it the weather here is not perfect there is a high haze and they're predicted to be a cloud cover a 2,500 to 33,000 3,500 feet at launch time but that's not a constraint to launch it although the weather requirements have been considerably

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requirements have been considerably tightened since we watched Apollo 12 go up through the clouds of at the Lightning bouncing around it then as we know knocking out the power supply very briefly they weather requirements are much tighter but none of the conditions which would prevent a launch seemed to be prevailing in the area now this looks quite good I'm real pleased that the problem that comes up with the Thunder is that you get the vertical flows through the heavy cumulus clouds and that static charge is what did it of course yeah now this time it's sort of a as you say a haze the very good description so Stratus flat layer so there should be no problem with this at all well we've got to look for those great big cotton candy the ones would make the anvils up there those are the really bad ones overly cumulonimbus cutoff tops the hammer heads and then the fluffy ones are kind of tradewind clouds that really can't do a lot of harm but could indicate problems that's the indication right CBS News color coverage of the launch preparations for Apollo 13 will continue in a moment in the spring a young man's fancy turns to thoughts of love if he's a gofer like Gerrard his first love is telephone cable Gophers love to gnaw they can shred an ordinary cable to pieces but today Gerard is in for a surprise because his lunch is wrapped in steel Western Electric makes underground cable that way for the Bell Telephone network to resist corrosion and moisture and to discourage Gerard and his friends we've got nothing against Gophers but either Gerard gives up his lunch or you give up your phone service and we'll do anything to prevent that but don't feel too badly about Gerard remember it's spring western electric we make bail telephones we also make the

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make bail telephones we also make the underground cable that Gophers don't gopher Western Electric manufacturing and supply unit of the bail system why all this is to be lanced trip to the home the third to make a landing the flight of Apollo 13 Jim Lovell is the commander of this mission he's the most experienced of all of our astronauts he's been up three times before and been to the moon once before although he didn't make a landing that time Fred Hayes who is the lunar module pilot and will be going to the moon surface and making two long walks with level on the moon is a space rookie he comes from Biloxi Mississippi married and three children on Houston Jack Swigert is the man who now finds himself as the command module pilot and will be circling around the moon for thirty three and a half hours alone waiting for the lunar module to come back from the surface of the Moon he comes from Denver's 38 years old and just got this ride this time because of that case of the measles measles that Kent Mattingly who was scheduled to be the command module pilot worked two years preparing for this flight hasn't gotten yet but according to the medical tests could get and has been exposed to the measles and since he might come down with them while he's up there on that flight the doctors just yesterday morning finally ruled him out of the flight and at that time the space agency officials decided that Jack Swagger was they say practically wrote the book on the command module and knows about as much about it as anybody spent a lot of time in the simulator and has more jet flying hours I think than any of the active astronauts today is a very experienced man well he for two days had been going through the simulated missions with the prime crew with a lot of help from Ken Mattingly who took his terrible disappointment was very good grace and he qualified Jack Swagger

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grace and he qualified Jack Swagger qualified to go and will go on this mission today scheduled to take off one hour thirty two minutes from now like everybody else we at CBS were caught by surprise by the sudden change which puts Whitehurst on the Apollo 13 crew my colleague David shoemaker had interviewed the three original crewman Jim Lovell Fred Hayes and Ken Mattingly but he didn't have a chance to talk with Swaggart really hadn't been thought to be necessary backup crewmen never have been substituted this late in a program before there have been substitutes but Dover before or two months before the flight actually took place however we've located an interview it was made with swagger done in 1968 when he was on a support crew that's the third line backup crew a third string behind the backup crew itself for the first manned Apollo flight that was Apollo 7 commanded by Wally schirra here and Swigert was asked about the duties of a support crew man including whether they ain't get a chance to work out in the simulators a large part in our in our work for example in the generation of the malfunction procedures if this is something that we want to verify in the simulators to make sure that the procedures that we have drawn up are accurate and correct the some of the other duties of the support crew involved the checklist which active participation the simulators is is is a mandatory do do you yourself have a flight preference that's known as a leading question well naturally I hope to make one of the lunar flights but of course right now my interest is getting this first flight off the ground I remember

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first flight off the ground I remember we had a coach tell us we play them one at a time and of course this is the philosophy I'm following right now what is your own personal philosophy about why you think is important for a man to go into space well the requirements for men to go into space are much like those that existed at the time that Columbus set out on his voyage to an unknown world but one of the things that we may learn from our visit to the moon will provide us with answers to many of what are now theories as to the origin of our solar system did you get a chance to actually work with the Jack Swigert when he was back up for that Apollo 7 he was the third string I Jack was the man who I would say is probably one of the most eager of the bunch whenever I got in the Scimitar all seats weren't filled meeting with Cunningham and Isley Jack was right on the silk lining in with me and he that's how he got all this simulator time just by being that yogurt he's a bachelor as Ken Mattingly is by the way and as a result I think Jack's spare time where they would spin inside that semi there whatever times we heard he's a very popular fellow with a whole astronaut crew when it became known that he might be making this flight to here when all the talk began Tuesday and Wednesday while everybody felt awfully badly for Ken Mattingly after working so darn hard and their hearts went out to him they did say that there wasn't a better man to be standing there next in line Jack Swagger well I was real pleased for Jack on this cuz I had worked with him he worked so hard for us in Nepal of seven days and as you said wrote the book all of the malfunctions that can

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book all of the malfunctions that can occur in the command module Jack actually traced through logic patterns down to where it was a logical way of solving these problems that's called malfunction procedures if you ever had something like that for your automobile you wouldn't even get in it's so complicated nice-looking guy 38 years old I can understand why he'd be a popular bachelor well yeah and Johnny they're only three bachelors I think of the 55 active astronauts two of them have been scheduled for this flight yeah old football player and he had his first flying lesson when he was 14 years old so he's really been out of a long time before the measles onslaught I suspected few people knew which astronauts actually were slated to fly a bottle thirteen you were not expected to until the excitement of the mission begins to develop now though we all know their names we still don't know perhaps very much about them and David shoemaker can give us some insight into the three men and into Ken Mattingly the fellow who now gets left behind David the crew used to joke about Apollo 13 the unlucky number Jim Lovell the commander is anything but superstitious Fred Hayes the lunar module pilot said he wished they could launch on a Friday the 13th but when Ken Mattingly was bumped the laughter turned a little bitter and the new member of the crew Jack Swigert was much too busy for jokes like Mattingly swaggered as a bachelor whose life has revolved around flying since he was a youngster he delivered papers to earn money for his flying lessons as an astronaut Schweickart has been more serious than in his college days at the University of Colorado when everyone called him big swig and he was president of his fraternity in the two days before his flight swagger took the toughest hazing of his life proving to a frankly skeptical gym level that he was ready it came so fast he didn't even have time to call his family back in Denver his mother learned the news from a CBS reporter said only recently her son had told her not to worry there was no chance he would be substituted in the last two weeks before a mission Jim Lovell resisted the change in his crew

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Lovell resisted the change in his crew for understandable reasons reasons that had nothing to do with swaggered personally he had a good deal of pride in the two young rookies he had trained with so long with more time and space than any other man he knows just how much pressure is involved in a flight and he likes things done without excitement levels easygoing manner has always been a delight to his co-workers who quickly tire of prima donna pilots whether the complexity of a lunar landing mission or dealing with reporters Lovell takes everything in stride Lovell jokes about a part-time job he holds physical fitness consultant to the president he says he qualified by doing nothing longer than any other astronauts meaning his record too weak endurance flight locked up inside Gemini 7 it is the time level has been forced to spend away from his family his 15 year old son Jay calls him the Traveling Salesman that prompted Lovell to announce that this would be his last flight that and a desire to open the way for younger astronauts well I personally think this light is very special for me I think it's an accumulation of the work that I have done in the space program it's certainly utilizing the skills that I have learned since I've been here and I think it has a lot to offer to the scientific community and the further exploration of of our universe you didn't really have to stop flying engine no I made that announcement basically because we have a lot of people in our flight crew area that are well qualified that have not yet flown and course suddenly now we're getting perhaps a reduction in the flights and I feel that I've had more than my share of space flights and I would like to step aside because I feel these people deserve an opportunity to do what I have done it was the astronaut class of 1966 that has been pressing hardest to do

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that has been pressing hardest to do what level is done the class of Swigert Mattingly and Fred Hayes the three men are much alike serious involved and worried about measuring up he's talked about it just before Ken Mattingly left the crew I kind of feel like I led three lives for the times with the on the job was being father and him and a family and again doesn't have that time to really worry about that he can put more in a mission I I kind of feel that this is certainly a big highlight I've been directed toward this mission a long time and that sure hate to feel that there was something that went wrong or I didn't do right I wouldn't want to have it on my conscience that it was due to something I didn't do to prepare unlike Lovell Swigert and Mattingly Hayes didn't always intend to be a pilot that came later in the Navy in order to get a commission he admits until then he thought he would be a journalist and worked off and on for the newspaper in his hometown Biloxi Mississippi but the demands and discipline of test-flying won him over and he has been a perfectionist and learning about the lunar module and the geology work required once he gets out on the moon's surface with Lovell for a time when Mike Collins became ill Hayes was slated to make the historic mission of Apollo 11 the first landing on the moon when Collins recovered Hayes slid back into his present position with a minimum of fuss and then came Apollo 13 and still another crew shake-up a demanding test even for men used to the pressure cooker existence of astronauts Lovell and Hayes and swaggered shuffling assignments on the crew at this late date has not been an easy thing to do NASA's administrator dr. Thomas Paine's spent 30 minutes alone with Jim Lovell yesterday additional time with Fred Hayes and indication of their frame of mind this is not to say that Lovell and Hayes are afraid to fly with Swaggart far from it

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afraid to fly with Swaggart far from it their reasons come down instead to the length of time it takes to get ready for a flight there's more to a mission and getting there and back as professionals the astronauts want to accomplish all the little touches as well to get the maximum payoff from their flight they are after all in a kind of competition with the other crews now to ease the way for Swaggart some things already have been dropped from the flight plan more than that level and Hayes and Mattingly have worked together a long time Hayes and Mattingly been friends for years there a team they look forward to this flight together and so the disappointment for Louisville and Hays is almost as bitter as it is for Ken Mattingly the fourth member of the crew of Apollo 13 well since we were assigned to his flight I just made it made up my mind that I had this one chance in a lifetime and it justifies doing everything and every thought between the time I was assigned and the time we go was concentrated on that one effort make up for the other things later but now after living the past four years for nothing else Ken Mattingly is not getting his chance of a lifetime more than anyone else Mattingly has been an astronaut period a bachelor he's been almost fearfully dedicated to his work even by astronaut standards he gave up everything including his social life when he was assigned to the crew flying has been his life all he is wanted since he was about 3 I guess I just grew up around it my father worked for an airline and I remember we used to go out on some buddies and drive around watch the airplanes and go out and see the little airplanes and he knew a lot of people that flew and that's just been one of the things that I've always accepted that that was something I was gonna do his family got used to the idea - his mother recalls that she had to give away about 50 toy airplanes when the family moved from Chicago to Florida but Mattingly who finished at the top of his test pilot class admits he was not all that impressed with space craft at first I was in college at the time I

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first I was in college at the time I first started launching spacecraft and at the time I remember I'd I didn't think that the mercury was a very attractive vehicle I was used to looking at pictures airplanes and that mercury capsule didn't inspire me but I had a chance a couple years later to be flying over the Cape at the time they launched one and that just looked like the way to go I didn't really believe it was a prayer in the world of ever getting there but it was something I knew that if I ever had a chance it will certainly be my first choice now was there any point in your life that you would say was decisive a sort of a make-or-break point in and bringing you where you are today well there have been a lot of things that any one of which if you'd left them out of the sequence might not end up here you can't second guess where where you'd be if you had done something slightly different because many of the things that turned out to be the most profitable to me at the time seemed like there were really steps in the wrong direction for instance well I started out I was flying on an airplane known as the ad I first came in the Navy I came in to fly jets and go boom boom and all that and this timing when I got there it just wasn't wasn't adequate and I ended up flying in a proper airplane I felt like that was the end of the world and turned out that the experience I got there paved the way to getting into another squadron and that put me out of cycle to go to the Navy's test pilot school and I was real disappointed with that and lo and behold out of that came a chance to go out to Edwards and go to the Air Force aerospace research school which was a direct stepping-stone to coming here so there'd been a lot of little things like that that I thought had gone wrong and in the long run they turned out to be just exactly what I needed now faced with the most bitter disappointment of his life Ken Mattingly must be philosophical again friends say he is dejected naturally and determined to get another flight but for now there is no happy ending to his story really expects Ken Mattingly to

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story really expects Ken Mattingly to get another flight to be put on another crew and it could be as early as the Apollo 16 which will be and next year so he will still get his flight and his certainly believe they're not gonna throw away all of that experience now have years of effort in learning to be a command module pilot now and everybody feels for him on this particular flight this means a lot more work for a month you're right and in fact I think you'll probably just take over where Jack's why he left off pick up the role of jackasses live it's it's certainly gonna be a terrible thing if he doesn't come down easily next week nobody has wished for another phone with every case of measles quite as much probably as a lot of people now for Ken Mattingly because if it turns out that was all of these tests or susceptibility he doesn't really come down with the disease after all and he's going to have a role he'll be absolute communicator this house like it was going to be reversing roles with England and he'll be in touch with swaggered and really being able to talk him through a lot of the parts of the mission that that Mattingly had planned for well it gets a really evident of what we've been trying to do all these years is to get the backup crews integrated so well if they can take the seat we didn't have time to in the past now were they six months between launches you can do that so I think you're fine this will go off quite well and it's a in a sense of a test and of course but it hope to proof that this interchange impossible the experiments they're dropping and David she much referred to are quite a few important photographic tests they want to run and taking pictures of solar corona that I call light photography of that and some of the lunar photography that that

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the lunar photography that that Mattingly had trained quite a long time to do hand me some new camera equipment and presumably that swaggered was included in on all of that I don't know how surprising probably what they're trying to do is cut back on the workload and we do some of the sequences of photographs but not a whole series of your student - a to give them an easier time line to follow the solar corona of course is the periphery of the Sun as it comes across using the moon as an eclipsing device of course they can do that up there okay and as a result you can take a good look at the perimeter if you may have been willing to see the solar corona I suspect jack will give it a go anyway yeah that that may be that they took it out as a must Newland made an optional 40s CBS News cover coverage of the launch preparations for Apollo 13 will continue in a moment you are looking at the most unusual bridge ever built made entirely of paper for the International Paper Company [Music] [Applause] the favored bridge was built to prove a point that paper is strong paper also can be made waterproof fireproof and of course paper is light and wait the paper bridge from the International Paper Company where good ideas grow on trees [Music] just a 1 hour and 15 minutes until the launch of Apollo 13 on his way to the

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launch of Apollo 13 on his way to the moon but the crew of Jim Lovell Fred Hayes and now Jack Swagger because Ken Mattingly was might've gotten the measles these those all came from Houston Texas remembers from the man space center there and Bruce Morton is there to give us a report on the measles epidemic I suppose Bruce everybody here at the manned spacecraft Center and its associated suburbs has been running around these last few days trying to figure out just who first gave the gentleman measles to whom but in fact it turns out that there's what one local doctor calls a mild epidemic of rubella in this area the communicable diseases man at the Houston Health Department says he has reports from several doctors that they're seeing a lot of cases the explanation seems to be that German measles runs in cycles every six or eight years and this is the start of a new cycle so the frequency of the disease is expected to keep growing in this area there is a vaccination a vaccine but it's it's very new and it's only just now available for public distribution in fact the Houston Health Department is not totally unhappy about Ken Mattingly's fate they are planning in the next few weeks to start a vaccination Drive in Houston's public schools children kindergarten through third grade and they think all this publicity is liable to be of some help to them the vaccine was available of course for the astronauts but doctors here at NASA point out that it hasn't been used simply because it hasn't really been tested on adults much yet there have been some cases if it's being tried on an adult woman who then developed arthritis as a side effect needless to say NASA was not about to offer its core of astronauts as as a test group for this the idea of 50 some astronauts with arthritis would not make anybody very happy what they didn't do this time was to check in advance for immunity to rubella probably because they were so preoccupied with other diseases that something as pedestrian as German measles just slipped by it's

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German measles just slipped by it's likely that they will be doing that in the future and the vaccine once it's been proven out with other groups will be available for use as needed but this time it's just a bad luck thing for Ken Mattingly Walter happen together Bruce because Charlie Duke who's on the on the backup crew visited the home of some neighbors the friends where the children had German measles he came down with German measles exposed Mattingly and the rest of the Apollo 13 crew to it it turned out that Lovell and Hayes had immunity but Mattingly bad luck for him I did not get some of those some of the souvenirs that he plans on taking the mood had went along anyway I gather and and his name will go along the plaque is already on the leg of the with his name signed on it Apollo 13 but they painted to make a new plan from Houston it'll be carried along and somehow propped up I guess on the LEM 13 but Phil Mattingly names will be there and the perhaps they'll call that anti rubella program in the Houston Public Schools the mattingly program and you'll be famous down there for a long time to come as they're thinking you know it's uh almost a poor jack cases can we'll have all of the mementos there on the flight indicating that he's been on the moon when in fact are releasing in the Visalia the moon and here's Jack and drilling around so yeah and didn't he tell you that he didn't have time to get any medals little goodies no yeah I think had two little medallions or something like that you'll have to catch up there how much how much stuff do they take a friend oh very little really we we've a cute we've been accused of carrying in our PPK which is a technical term for it that means pilots preference kit Oh a whole batch of things and of course you've never seen in commercials come out of it yes very true there's nothing will the shows might have a small ring for the father or their mother or their

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for the father or their mother or their wife in this case uh I don't how many girlfriends Jack and you got a problem with that but what any case they don't a great excuse maybe they planned the whole thing that way and gentle he incidentally if we haven't reported that he threw off the Houston last night I don't know whether he just decided that he couldn't spell no this is a normal procedure it doesn't almost have expected that because I had to be in the control center to pick up the count this is you and I were out here early to pick out the count only the Capcom is on the console about three hours before us before liftoff there there prior to the crew coming of the spacecraft have we heard is he gonna be Capcom for liftoff I only would expect him to be back there I I started that tradition really with Apollo 7 that was my backup go ask Tom Stafford to go back and John young stayed here to help repair the spacecraft so I think Ken's probably in that role you have to pick your own Capcom we do well it's more of a writer refer a refusal and of course everything that we would refuse but typically we ask for the best man we can get in fact I forget the day I asked al Shepard to help me on my record flight he ended up for this boat and it was a boat a real round-bottom whole walked Japan in the middle of a typhoon least I think you're still looking for me other ghosts out our CBS News correspondent who's helped us cover nearly all of these flights is with the Leo Krupp the North American Rockwell test engineer who has also been in our test command module for all of these flights and there again in the command module at our space center on Long Island the gentleman I'm wondering from your vantage point what problems you see that Jack Swigert might have and fitting in and out of this crew you know Walter Leo is a basketball fan and he keeps talking to me in terms of the Los Angeles Lakers readjusting to Wilt

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Angeles Lakers readjusting to Wilt Chamberlain after he was out for so long is it really comparable or is that just a sports talk Leo no I think so Billy there's absolutely no doubt in anybody's mind that Jack Swigert has the ability and knows the command service module systems to carry this flight off the only the only thing that I was concerned about was the the precise timing and coordination required by the crew especially if they have an emergency jack will be setting in the center couch on liftoff and if they should have an emergency the guy in the center couch assists the command pilot and making a lot of decisions he's he's using the computer he's giving him information he's reading him the checklist and it operates a lot like a basketball team and I know coach Mulaney of the of the Lakers wanted pro will back into lineup because he's a real pro but he had a problem of maintaining the team timing and coordination and they did have a little rough time the first few games until Wilt worked into the system and I'm sure that jack has worked into the system or or jim lovell would not have approved the the substitution so I don't think there will be any problems because jack is an outstanding gentleman he's been in the command service modules on the malfunction procedures he knows the system's backwards and forwards and there should be no problem my real another real concern I have is for Ken Mattingly I know Ken wanted to go on this flight so badly and yeah I really sympathize with his disappointment but at this point that it is teamwork and timing those are the two factors Walter for a rundown of the lunar module we have Nelson Benton and Scott McCloud bill looking ahead a little bit to the culmination of any successful flight is of course the landing and this time the landing is going to be somewhat more complicated it's going in they're going to Highland areas into treacherous terrain and Scott McCloud who is chief consulting pilot for Grumman Scott how is this landing different how is it tougher than the previous ones well Nelson the approach is not that different on the landing but

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is not that different on the landing but they'll be landing as you mentioned in the Highland areas and therefore there'll be a lot of large rocks in the area not as good a runway no no the runway is going to be rather poor on the flight of Apollo 12 there was this matter of dust as the lunar module approached the surface dust coming up around the moon have there been any changes to try to overcome that problem well there haven't been any changes Hardware changes really a more or less a procedural change in that now the commander will be using the ro D that's the rate of descent switch to control his rate of descent going but in addition he has the capability to go into automatic hold on translation well it doesn't have to attend to this during the last IFR what you're saying then is that when the dust comes up they can hit the automatic switch in lands thought of no hands so yes they have that capability well that comes a next Wednesday night but back to the events of the moment right now a new water let me see if I get that right Scott what what what they're what they're doing this time is in effect they've got the capability of going back on to automatic after after going on to manual so that what level is going to do with the limb is come in automatic for a while of course and then and then he's going to take over to much higher altitude manually and hover right down at a rather high altitude over where he wants to land and then he throws it back onto automatic and it just sets it down like an elevator roughly roughly it that's about it if anything more than roughly wyomia progress well he has that capability I'm not saying he will do it it's a program 66 that he can use on the disk II hear CBS news color coverage of

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disk II hear CBS news color coverage of the launch day of Apollo 13 will continue in a moment a laser beam it was still just a gleam in the eyes of scientists until 1965 when engineers at Bell Labs and Western Electric became the first to put the laser on the job in industry the job piercing holes in industrial diamonds to make thin telephone wire today Western Electric uses the laser to cut material for thin film electronic circuits we also use the laser to measure and to weld tiny parts for equipment we make for the Bell Telephone Network someday the laser beam may transmit telephone calls and other data someday you may find yourself talking over one Western Electric we make Bell telephones we were also the first to put the laser beam on the job in industry CBS News color coverage of the flight of Apollo 13 continues after a station identification this is CBS

[00:40:28 (https://www.youtube.com/watch?v=5mntGiDejBE&t=2428s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=2428s)

CBS news color coverage of Aquarius on the moon continues sponsored by the International Paper Company where good ideas grow on trees and by Western Electric the people who make telephones and communications equipment for the bell system Aquarius on the moon Aquarius the lunar module due to land on the moon on Wednesday if this take off today from Cape Kennedy in just one hour and one minute from now is as successful as everybody thinks it will be and hopes it will be of course Aquarius is the name of the lunar module that Jim Lovell and Fred Hayes will fly to the moon surface the command ship that Jack Swigert will be flying around the moon waiting their return is called Odyssey Aquarius according to level because it was Aquarius the water carrier who helped bring enlightenment back in the logical period and also Aquarius because it represents the youth a new age and that he says is why he named the lunar module

Aquarius Odyssey because presumably it continues its wanderings around the moon successfully it's hoped and to bring back a lot of stories is even did and this is after whom the Odyssey was named and homers famous stories of those ten years of travel

[00:42:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=2520s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=2520s)

stories of those ten years of travel everything is go for the launch the crew is in the Apollo 13 command module high atop the powerful Saturn 5 rocket out there on pad 39a here at the Kennedy Space Center and the weather is not deteriorating very much there is that eye of haze that will not be any constraint to the launch this afternoon I suppose the second major topic of conversation after the measles is the weather as you may recall the bomb of 12:00 lifted off last November in a terrible rainstorm although weather men spotted no lightning in the area of the space vehicle perhaps one of the theories is created a don't elect or charges any rate there was lightning and that caused serious but fortunately only momentary power failures aboard the spacecraft launch officials have changed the rule since then they're a lot tighter now and we'll review those in a moment first let's look at a film of that Apollo 12 launch sequence nine six five with the ignition three there's that hold on you can see how dark that was that miserable day I'm relying very very vividly know what disappear at the top of the time that everything's fine yes they were calling back everything out practically we've had a couple of cardiac arrests down here to pee but Pete Conrad and his crew

[00:44:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=2641s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=2641s)

here to pee but Pete Conrad and his crew did everything just exactly as they should have through the right switches analyzed the situation and the way they went that was probably the fastest six handed poker game I ever know they they really were busy and of course they ended up in Earth orbit settling in on era alignment of their platform which is very significant and I since I've talked to dick Gordon and he mentioned that it was very difficult to make the alignment first because his eyes hadn't adapted to the dark side and Earth orbit to pick up the stars and he was very concerned he couldn't see any yet and of course that problem was finally solved by night adaptation is a typical term soon everything started falling back into order and orderly mission for midnight how long then was it all together that they still had some doubts about the mission oh I'd say yeah probably by the end of the first orbit when they have the platform align and everything was back in order there were probably at least if no longer cardiac arrest there were some rather slow beating hearts admission control well Mission Control didn't intend to have any more cardiac arrest for that reason they really put some pretty tight stringent weather regulation so I think about as tight as they've been since the days of Mercury and early Gemini flights when they wanted visual observation and photographs of all phases of the launch operation and now they're really pretty tough again at our Space Center in new york at wcbs-tv chief meteorologist gordon barnes can give us some detais those new mission rules for the launch day weather and perhaps something about the weather Gordon Walla when I came in this morning and looked at the weather map it looked very similar to what it did back in November of last year during the launch of Apollo 12 however there's one major difference at this hour on the map and that is the frontal system has remained stationary it has not moved like the last one did but based on the circumstances surrounding the launch of Apollo 12 weather requirements have been changed to avoid a repetition of that harrowing experience first of all a launch may not take place if the flight path of the space vehicle will come

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path of the space vehicle will come within five miles of a thunderstorm or within three miles of an associated anvil as pilots know in the area underneath that anvil there's a lot of turbulence severe turbulence and also some hail I know of cases myself flying from Bermuda to New York once you cross the Gulf Stream and hit one of those animals yet hail as much as 40 to 50 miles out ahead of it secondly no launch may proceed when cold front or squall line clouds are present as they are also capable of producing thunderstorms as well as turbulence in addition metal cloud layers 6,000 feet or greater in depth where the freeze level is in the clouds here again the contrast in temperature will create turbulence as well as trigger off thunderstorms finally cumulus type clouds with tops at 10,000 feet or higher as this type of cloud usually indicates the atmosphere is unstable thereby there is a high potential for thunderstorms in northern Florida yes they do have showers and thunderstorms today however down there at Cape Kennedy you have some high thin clouds one layer at 14,000 feet and another one up around 20,000 feet president occasions are that that is what you will have at launch time in about one hour looks good Waller looking out the window it looks pretty good I know that's no way to make a weather forecast step on your lines there but there is that but we also know by golly you can get change weather down here in a matter of seconds there have been moments when we've driven out here to the to our press site from Cocoa Beach and dry in rain you wouldn't believe that there could ever be a launch and a couple of hours later at lunchtime why the sun shining and it's just beautiful the reverse also could be true but we're glad to have your word Gordon that there's nothing around us that on come in here in the next 55 minutes and seven seconds to delay this another on-time departure for Apollo you're going off and marvelous but with marvelous

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and marvelous but with marvelous precision in time this mission and there there's a great picture from one of these static cameras that television cameras that are all around the the Saturn five and it's a precious cargo of the Apollo 13 to give the launch control center constant monitoring of what's going on out there you saw a moment ago the big bells of the Saturn 5 first stage a powerplant each of those pumps forward a million and a half pounds of thrust for a total of seven and a half million pounds of thrust to get this 360 flip beast up into the sky it weighs almost half again as much as a small destroyer and it takes an awful lot of power to get it off of the sands of Cape Kennedy okay you're actually Maradona I'm glad they're using that word pound because it a lot of people have trouble relating that but really what you're lifting are pounds and the thrust is the same pound so you have more pounds thrust and you have weight of vehicle and then as a result you go up at least that's the way it's supposed to work yeah the of course that these are three stage vehicles that we have now which makes it possible to go to the moon that's the big engine to get you up off of the surface of the earth that takes the most thrust and then when you get up a little higher you can drop off all of that extra weight go to the second stage which has in this case a million pounds of thrust the second stage and that can get you up into the earth orbit with a heavy payload and around and then at the third stage you can cut in and now you're up above all of the drag of the atmosphere and with the two hundred thousand pounds of thrust where you can get off on the way to the moon really haul the nail as mostly the fellows are saying this this mission is not just a carbon copy by any me the follow eleven and twelve no more than twelve with a carbon copy of eleven so matter-of-fact eleven each of these

[00:50:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=3000s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=3000s)

so matter-of-fact eleven each of these missions is a step forward of a progressive step and when people asked why do we still have to go well there's there's more to be done more to find out this mission for instance as opposed to eleven and twelve eleven was a mission that simply proved we could land on the moon that's really all that amounted to 12 which was course a lot I don't mean to decry that at all the follow twelve the mission was the first really a geological mission to gather some sampled rocks to put out a scientific space station with its a known atomic power plant that could continue to operate indefinitely certainly at least a year to send back data from various experiments that were placed on the moon by Apollo 12 and both of those landings made in fairly flat areas not particularly interesting geological areas now we proved with a bottle 11 and 12 that we can get in and that the guidance system if the spacecraft works well so with the confidence of that experience behind us you can take Apollo 13 and really go into the so-called highland area of Fra Mauro on the moon named after a 15th century monk was a pretty interested in geology and geography and such things they named that area the moon from our Oh it's a it's it's what were there at going really are the foothills of some quite mountainous areas on beyond but they're going to the foothills of these mountains where there are 4 and 500 foot high hills and indeed they're going to try to climb one of those it's about a 10 to 15 degree grade it's gonna be quite a climb some 3 or 400 feet up the side of this mountain up this hill that goes up about 400 feet scald cone hill and they're going to go up there because of the interest in this whole area they feel that on the edge of that cone there may be some of the oldest rocks on the moon so far they've brought back rocks from

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so far they've brought back rocks from Apollo 11 actually a 4.6 me in years they think very probably that there may be five million year old rocks in this area because the mariya brim of the ocean of rain a sea of rain so-called is one of the largest of these Mari sea areas and probably formed by one of the largest impacts of another meteor perhaps another moon billions of years ago on the moon and it plunged in all the way down to maybe much of the hundred miles and throughout all of this debris what it means there's a debris in there from way deep in the moon perhaps scattered on the surface of this area that's why it's interesting that's why they're going there a lot of new things about the flight and getting there one is the weather constraints we've talked about after Apollo 12 that's new assess this the s4 be the third stage of the rocket stage that puts them into the lunar trajectory once it does its job and they cut off from it later today that s4b will vent its liquid oxygen and inventing it picks up some speed picking up that speed instead of being hurled around the moon on out into a long solar orbit it's going crashing into the moon this is deliberate this big thing is going to go pounding into the moon at about seven or eight thousand miles an hour and it will with have an impact of equivalence they have about eleven tons of TNT they say that's the biggest thing to ever hit the moon that we know about and the big point is that with the seismograph left on the moon by Apollo 12 around a hundred and forty miles away from that impact point there we'll be able to measure a lot of what's underneath the moon's surface through the quake that results from that big impact a matter of fact with the with the Apollo 12 Lam going into the moon

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the Apollo 12 Lam going into the moon they already have some new mysteries about the loom moon for these first two flights the scientists really haven't really haven't they've learned an awful lot with them decided anything about about what the moon really made of yeah think I learned a lot about what they don't know yet yeah the Apollo when Apollo 12 LEM went in yet registered on the seismograph a quake a bell like reaction that lasted for 55 minutes I suppose now any similar thing on earth the earthquake is about a five-minute tremor as the most so that gave them a whole new area of inquiry as to what the moon is made of if it rings like that really and literally when it is hit and and that's why they wanted another big shock but they asked for B now also the combined command module and lunar module this time instead of separating and the orbit around 70 miles above the moon and then the lunar module doing its own descent and getting down to the level where it can actually make the landing they're going down together there after the third revolution they're going to fire off the command modules service propulsion system and use that to for the whole combined operation to sweep down within 10 miles of the moon's surface and down there they're gonna fly right over that's 3,700 miles an hour but I guess they see something that's beat there they fly over the Fra Mauro landing site and and they'll do that to nine times connected as they will be that takes them about 18 hours or so and then they separate and a couple more times where the lunar module come come sweeping down over that site and on the third time down when he lands but that gives them a chance to much better tracking information they know exactly where they're going take a chance to look at the area first and matter of fact they're gonna give us a television transmission I think I'll be pretty exciting that'll oh man I tried that at the evaluator a North American in fact and it's pretty sporty ride getting down

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and it's pretty sporty ride getting down that low of the moon this is the same attitude that most of our commercial jets are flying if you think about it about fifty thousand feet the Jets now are about forty so that doesn't seem like very low to us here on earth but it's an awfully low and your your very velocity by just a gray that it could be too low you of course watch worse this is going to be a very interesting maneuver for the crew it just it has to be very precise it so the reason for it is to improve the tracking it's also to add to the to decrease the propellant requirements for the limb so they have more time to hover over the surface Atlantic's but I think they gain as much as 15 seconds yeah over time which sounds like actually nothing when you think about 15 extra seconds to take a look at where you're going down there I guess that's pretty critical well he won't really on 11 we were sweating it well no we heard 30 seconds to go and they you still likely left about what about 20 seconds left that's not much time there are 15 adds up to be a big number when you get down there towards zero at least I think they've done a margin to cut off margin a 30 seconds haven't they they've got to get out of there there's two if they get under within 30 seconds of fuel and they got to move out and not fiddle rounding longer and 11 the first reports were that they only had 40 seconds of fuel lapping weirder than 10 seconds - that red light going I think later on the update event I can feel better it's very hard to gauge that and that's really the reason I took in the first flight we weren't sure how accurately the gauging system would work in that confidence now has been built up for the 11 in 12 other things that are new on this flight we're gonna have color television we hope they've got a lens cap this time so that the Sun will not burn out the tube as it did on a bottle of 12 we should see most of the to walk periods although some of that second along Traverse up the mountain side hillside we perhaps will not get to see too far away from the camera position they're going to have drinking bags a little thinking bags

[00:58:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=3481s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=3481s)

drinking bags a little thinking bags inside their spacesuits this time for the walk because I got pretty thirsty last time and now they're gonna have a little 8 out so drinking bag not very much but will help the Sun angle is gonna be a little higher and landing but that shouldn't give them that much more difficulty and those are the principal differences other than the scientific ones we might want to talk about that - David shoemaker and dr. John Salisbury of the air force at Cambridge Research Center are standing by in New York to give us more details of the scientists interest in this flight the gentlemen right Walter dr. cells very the first landing on the moon Apollo 11 here and tranquility the second one Apollo 12 800 miles to the west I guess you'd call it here and now we're going to this spot in the Highlands area fra mauro why well david what we really want to know about the moon is what major events happen during lunar history when did they happen why did it happen how did they happen now the first two landing sites on the Mari areas had one advantage which was that they were relatively smooth but the lava flows that made these areas smooth it's also sealed off from our inspection any evidence we had of early events in lunar history the Apollo 13 site on the other hand has the advantage of bearing material that we could have access to it will tell us about some of the earliest and most spectacular events in lunar history the one that I'm referring to as spectacular is the giant impact that produced the Umbrian Basin up here to the north this impact laid a gigantic blanket of debris down to the south the blanket is very thick here in the Apennine mountains it's 10 to 20,000 feet here it thins rapidly to the south in the area of the Apollo 13 site it's probably 300 to 600 feet thick now if we can sample this embryo ejecta we can sample a material that's derived from 30 miles perhaps within the body of the moon we'll be able to answer such questions as when did the moon first solidify and when did

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did the moon first solidify and when did this gigantic impact take place and generally much about the time scale and nature of the events that carve the face of the moon as we see it today well from a scientific standpoint then this area has always been interesting highlands areas have been the places you've wanted to go most and they've been the places that astronauts have wanted to go least what does it look like we're Louisville and Hayes are going to be landing well I think we can see that on this model here just happen to have just happen it's of course a very rugged area and there's no doubt about that the their ridges present one Ridge you can see here another here these these ridges are ridges of ejecta thrown out of the Embree and impact some of the more recent craters in the area are heavy we covered with blocks very coarse blocks of debris that are would be difficult to land among but fortunately in this area here and in other valley areas in this region we have had some invasion by volcanic material and this volcanic material does provide a relatively smooth surface on which they can land and it will be somewhat similar to the surfaces on which they've already landed successfully that is as long as they're pretty well on the centerline as they come down yes they have to target in over these ridges to get to the smooth area in the valley Walter it doesn't look too hard from here it looks pretty easy as a matter of fact the we've got a kind of an interesting picture here I think you might like to see it's from up on the service tower of the final 13 right up there at the command module level you just see the command module that tapered part above the above the Saturn 5 and looking back at the track of which the erector carriage brings the crawl record in rollers a couple of football fields at least you ever saw and here's a picture taken with a new color television camera

[01:02:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=3721s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=3721s)

taken with a new color television camera on the launch tower which is almost identical to the color camera 12-pound device that level and haze we use on the moon the a couple of differences not very important one is enclosed in a special box to protect it against damage there on the on the stand here from the Rockets exhaust and it has a new tube which can't be burned up by pointing at the Sun NASA's looking into the possibility of incorporating that new tube incidentally and future lunar television cameras the - but you were using right there for that particular a picture the tube but it's going up on this Apollo 13 and there's a great picture of the command module and the service module right behind it which is the same dimensions in diameter as it is and the launch escape tower at the top that thing that looks like a television antenna sitting up there in the top is the so launch escape tower it can pull the with rocket power pulled the command module free from the rest of the rocket and to carry it on up and away from any catastrophe which may overtake the rocket on the launch phase and then detaching itself the command module can drop back into the sea use regular parachute system the top thirty nine and a half minutes before the launch and here we have a look at Mission Control in Houston Ken Mattingly has just come into Mission Control Center taking a seat next to the Capcom desk and I can't identify him there can you I think I see right there yeah just to the right control panel he when he arrived flight director Milton Windler told him I'm sorry to see you here Kim the incidentally we got word from over at

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incidentally we got word from over at launch control center a moment ago that dr. Thomas Paine the administrator of NASA said in told the boys in there that if Ken Mattingly didn't come down with the measles dr. Chuck Barry the astronaut physician who who made the decision that he was liable to they had the pain himself gonna hold him up so that Mattingly can punching the least he do I suppose I really of dr. burry was as clear as I know he is you might very well have administered some weasel germs CBS News color coverage the launch day of Apollo 13 will continue in a moment near on a Lulu lies Makaha famous for surf here at Makaha an unusual surfboard a paper surfboard made of a new corrugated paper from the International Paper Company called surf core [Music] surf core stays strong stays rigid no matter how wet it gets look for some big changes in the produce industry the shipping industry the construction industry wherever corrugated paper board has to stand up to water [Music] surf core from the International Paper Company where good ideas grow on trees and with 37 minutes left of the countdown which is proceeding absolutely normally there have been no problems at all since the measles came along and Ken Mattingly was replaced by Jack Swigert in that crew of Apollo 13

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in that crew of Apollo 13 due to the launch team from the Cape toward the moon the timeline incidentally the launch this afternoon scheduled for 2:00 13 p.m. Eastern Standard Time just 36 and a half minutes from now there should reach the moon at about 7:30 p.m. on Tuesday they touched down on the moon at 9:55 p.m. on Wednesday the first walk is a 2:25 a.m. Eastern Time on Thursday early in the morning a second walk at 10 o'clock that night the liftoff from the moon then the following day at 7:20 two in the morning the docking with the LEM returning to the command module where Swaggart will be waiting at 10:58 a.m. on Friday morning they leave the moon at 1:42 p.m. on Saturday splashed down a little south of the equator out but Pacific at 3:17 p.m. on Tuesday April 21st if the flight of Apollo 13 goes as the others do they'll be right on target within a couple of miles of where it's been planned for them to drop for the last two years and they'll be right on time within a few seconds of that planned landing time which is one of the remarkable feats a half a million mile voyage for days around the moon and back to earth and be right on time just as they planned it in the book Nelson Benton and Scott McCloud at Grumman aerospace out of Bethpage Long Island have a look for us at the two walks on the moon the highlights of this trip at Lovell and Hayes are going to take gentlemen what are the moon walks that are scheduled or greater in time in the distance that they hope to cover on the lunar surface and in the requirements that they face during those walk the CBS News simulation in condensed form has Scott MacLeod in the role of the commander and Grumman engineers Charles Smith performing the functions of a lunar module pilot and it begins of course on next Thursday morning very early when the commander will start his

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early when the commander will start his egress from the LEM and we might note very early in this that that stripe on the commander's helmet a red stripe he also has stripes on his sleeves and his pants legs is to help scientists distinguish between the commander and the lunar module pilot as he descends the ladder he opens a equipment storage package and there of course is the plaque which has Mattingly's name on it but as you reported earlier they will be carrying an extra plaque with Swaggart's name on it at the bottom of the ladder is the familiarization you see the stripes on the sleeves of the commander so that in photographs and in television transmissions back to earth the commander can be distinguished from the lunar module pilot these suits allow a little bit more freedom these were made by ILC industries who make the realsense the lunar module pilots still inside while the command pilot gets what is called a contingency sample a very quick bag of lunar dust in case the moonwalk should have to be terminated for some reason or other ahead of time he takes that bag off the end of the rod and places it in his left pocket down by his knee in the the lunar module pilot egress is some 20 20 minutes or so later that's becoming if all goes well the six man's to set foot on the surface of the moment among the very early functions that are performed by the crew and their stay on the moon is to prepare our supplemental antenna to move into position which will tell you a little bit more about in just a moment or so and also to get the

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a moment or so and also to get the television camera all set to go and this time there is an uncapped camera so that we can see that first step of the crew onto the moon but one of the first things they'll do when they get to the camera itself is to put a lens cap on it that something that was learned from the flight of Apollo 12 when it's believed that a camera being pointed directly at the Sun is what rendered it useless and in the event however that this color camera does not perform properly there is another black-and-white camera on board the lamb that can be brought into use by one of the crewmen going back inside bringing it out of and hooking it up there is an effort plan in the surface operations to put the television camera into position into strategic position during the lunar walk so that the activities can be observed and this is an auxiliary antenna that employs like an inverted umbrella it's got what is that why do we need another antenna we're getting pictures back and getting data back all the time well this is called the erect ibill s-band antenna and the purpose of it is so we can get everything back at the same time we don't need a timeshare for example our data it carries a heavier load than yes it does then the antenna onboard the spacecraft itself now the lunar module module pilot is going back into the lamb the reason being that he has to go back in to get to the right switch to activate that antenna rather than being able to do it from the surface itself very early in the first evey a is the deployment of the American flag which has been done on both preceding flights is first a small staff driven into the surface then a second one attached and the flag deploys itself with its own built-in wind since there is no wind on the moon in each case they're what they're trying to do as you pointed out before is keep that TV camera pointing

[01:12:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=4320s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=4320s)

before is keep that TV camera pointing at portions that can be seen so that they will try and stay in the field and everyone here can observe what is going on the whole time the camera has been moved over to what is called a scientific equipment quadrant to observe what will be done there and what will be done there's really a great part of the purpose of a flight what's going on there Scott well he's pulling out one package the first package from the alsep where the scientific equipment is first he pulls it out on that boom then we'll pull the other line yard and that drops it down to the surface of the moon yes and then there's a second part of the scientific package that that's removed by hand the package contains another seismic measurement device to measure moon quakes it contains an atmosphere detector if there is any atmosphere all of us form signals that are sent back to earth and it's powered by a radioactive generator and this is the rather ticklish and tedious process of loading the fuel into that generator Scott it must be handled carefully yes it's a very high temperature right now or degrees right now the Lemp islet is taking the cap off then he will extract the core then the commander will tilt the package on the surface of the moon over so they can be easily entered into there that's the that puts the generator all together a couple of special tools for handling this hot hunk of plutonium to avoid brushing the spacesuits because it could do some damage to the suits should it brush them this is a another solar wind composition measurement actual it's aluminum foil and it picks up particles they'll take it off and take it back with them now the commander has taken the two packages

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the commander has taken the two packages and put them together with a bar and he's carrying that across to where they'll deploy the scientific panel that big barbell is about 215 pounds on earth it's heavy reduces it to about 36 pounds on the moon's surface they go I think about 300 feet away so that they will not the scientific packages will not be affected when the ascent stage fires and they could back up again to get it out completely from the blast deploying this scientific package takes a great portion of the first four-hour walk on the lunar surface that gadget that looks like a sophisticated long stand water fountain as a central station that takes all of the information from the seismic package from the lunar atmosphere detector from the other experiments and collects them electronically and sends them back to earth electronically and this is a new gadget for the flight of Apollo 13 this is the lunar drill and Scott that's a fairly sophisticated piece of machinery yes it is a lemon pilot in this particular experiment we'll be doing all the drill work that's Fred Hayes here he's assembling the drill and he'll drill down the grille I believe three different holes has a capability of going about ten feet down and you drill a little ways and then put on another bit drill some more three holes two of them are for heat probes that will be inserted down low in the moon surface up to perhaps 9 or 10 feet and connected to that Central Station they'll send back temperature readings that could tell something more about the lower composition of the moon what it is below the surface and then as a third hole to be drilled which will just give scientists a deeper sample not the earth of the soil on the

01:16:05 (https://www.youtube.com/watch?v=5mntGiDejBE&t=4565s)

sample not the earth of the soil on the moon I don't know whether you can see it clearly there is a lanyard that he's holding on to as he inverts the drill each time to set it down one of the engineers who was involved with the development of this drill told me that it cost 2.7 mega bucks to bill that's a Spacey's for 2.7 million dollars but they come out I think it costed a lot a hundred and seventy five thousand dollars a piece now the heat probe is being inserted into the hole it's a highly sophisticated thermometer really Scott yes this will transmit the information back as to the temperature on to the surface of the moon here he's a justing he just finished the adjustment I guess he's inserting it again there then the Central Station wants all of the scientific packages deployed the Central Station is turned on so that it can start sending information back some of the equipment is tossed away of course now at this point they're going for the deep hole I believe this is the using the drill again to get a very deep sample up to eight or nine feet depending on how much resistance that drill needs at that price it shouldn't reach too much me too much resistance and this will be disassembled in Karia beliefs I think they're about 18 inches long and carried back to give the scientists on earth a longer stratified sample of the moon's crust and after

01:18:03 (https://www.youtube.com/watch?v=5mntGiDejBE&t=4683s)

sample of the moon's crust and after this probably four to five hour bit of activity they'll brush each other off take some of what they've gathered back into the limb and go for about a 16 hour rest period before preparing for the second EBA and late on Thursday night they'll take that second EBA which is composed of a lot of walking actually they'll walk about 4,500 feet if they land where they hope to to the cone crater which is believed to be perhaps oldest to represent perhaps the oldest part of the moon and in all the route they take going and coming back they walk something pretty close to two miles I'd be taking samples along the way and sort of their choice as to what they want to do along the way and I coming back this we probably will not see on the television camera because they'll be out of range they'll take a special sample from a trench and this is to tell scientists a bit more about the soil mechanics of the moon they also take the routine core sample mm-hmm which hollow tube goes down into the crust and you can see on both of their backpacks here this canvas bag that they carried a similar one on the last launch which they brought pieces of the surveyor back in now they will bring samples back in that and they each carry one this condensed version of course doesn't share show all of the photographing that the two crews crew members will be doing all along the way but much of it will be documented to the extent that scientists back on earth will know where what came from and under what conditions it was taken off of the moon and then after the second four or perhaps as much as five hour walk on the moon they will settle down to get ready for the problem of

01:20:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=4801s)

down to get ready for the problem of coming back to earth Walter but they can extend it to another hour and everybody's betting that they'll take the other hour if all their consumables are right things are going well on the surface of the Moon thank you gentlemen out there CBS News color coverage of the launch day of Apollo 13 will continue in a moment if you watch carefully and listen the body will tell you how much effort it takes to perform a job this is part of a new science at Western Electric called biomechanics the science of man and machines the people of Western Electric in cooperation with Texas Tech and the University of Michigan have pioneered studies in biomechanics we believe it's better to change jobs to fit people than people to fit jobs so we're redesigning chairs work benches and assembly lines we use to make equipment for the Bell Telephone Network we've even listened to an alarm talk and tell us how a basic hand tool can be changed to make people more comfortable at their work Western Electric we make Bell telephones with people and machines that are made for each other an under reasonably clear skies a high hey still but no serious weather problems we're waiting for the launch of a bottle 13 with some 21 minutes and 25 seconds left in the countdown before the launch is scheduled for 2:13 p.m. Eastern Standard Time we had some reference earlier today to the number 13 in this flight it is taking off at 2:13 it is Apollo 13 and there'll be the 13th and 14th and 15th men's go to the moon so but none of us seem concerned at all about the numerology

01:22:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=4921s)

concerned at all about the numerology involved like the launch all the countdown is going well with Jack Swigert now in that little command module pilot see instead of Ken Mattingly who make be coming down with the measles we're going to have a new voice of a apollo here for the launch phase at the Cape today a Chuck Hollenshead who has been a deputy to a Jack King is taking over the voice job today Jack King wanted to see one of these launches from outside it's a temptation I guess for everybody was locked in the control room during the during the launch so Jack King is out of the press site to see for the first time other than on television the launch of an Apollo spaceship and we're going to be hearing from instead - Chuck Collins head has been drilling long as the backup man - Jack King as the voice of launch control we ought to hear an announcement from him just about now 19 minutes 59 seconds and counting now at passing the 20 minute mark in our countdown and the spacecraft test supervisor has indicated that they're running just slightly ahead of that in their countdown the command module pilot Jack Schweickart is now pressurizing the service module reaction control system this is the system on the service module which consists of four quadrants with four engines each each one of these develops 100 pounds of thrust he's arming these systems by letting the hypergolic fuels either mono methyl hydrazine and nitrogen tetroxide flow down through the system down to the final valves hypergolic fuels ignite on contact so once those final valves are open they would ignite and the system would be activated so I could also reading out the temperatures and pressures of that system a countdown moving along well at this time t minus 19 minutes four seconds and counting this is Kennedy launch control I've

01:24:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=5041s)

this is Kennedy launch control I've often wondered whether Jack King and Collins had to have a book from which they're reading all of that information or it's all back there in their heads I suspect a combination of both at any rate they do terrific jobs and it really it's a an extraordinary performance that they put on and keeping us so so clearly informed about every move what's going on out there at the launch pad a lot of things that the average viewer and even those of us here relaying it to our viewers out there don't really need to know but it's a terribly fascinating information they incidentally if speaking of viewers the there's still a large crowd here for the launch of Apollo 13 there's some 7,500 invited guests or more than that I guess they're 11,500 invited guests from NASA 7,000 or said to be it at the VIP viewing stand over on the causeway a couple of miles from here and here at the VIP site right here at lunch control another 4,500 guests with the principal ones being a vice president Agnew and that he brought to the West German leader who is on a visit to the States and has come down to watch this launch today he has reason to be proud so many of the important people in our American space program are from the German rocket to program who came here their own volition immediately after the war choosing the United States over Russia and knowing that their talents were going to be required by one of the two conquering nations there is the press site which is right outside of our CBS window here and the VIP site is over on the other side of the Vehicle Assembly Building Oh perhaps 5,000 feet from us here Bruce Morton at the manned spacecraft Center in Houston has a

[01:26:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=5160s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=5160s)

spacecraft Center in Houston has a report on how the families of these astronauts are getting along Bruce I'm tempted to say this is another report from Meisel central I don't think we've ever talked about a children's disease this much on a space shot before well a letter is up over where you are she's at the Cape with their four children one of whom four-year-old Jeffrey has come down with the wheel as opposed to the German measles but that apparently hasn't interfered with his going to see the launch mrs. Fred Hayes is here with their three children her sisters come to watch the launch with it she incidentally is expecting their fourth child in June about a month after her husband is due to get out of quarantine Jack Swigert of course has no family uh one of the very few bachelor astronauts like Ken Mattingly he replaced he does have a lot of friends here we talked for a couple of minutes with the manager of the apartment building where Swaggart lives she just couldn't find enough good things to say about him a brave courteous kind all the adjectives in the Boy Scout manual and said her only regret was that this whole switch happened so late she couldn't get a party together to watch the launch won't it as a matter of fact to understand that Jack didn't even have time to get any of his friends down here to watch this launch he was hoping that there is a father and mother his father as an ophthalmologist hi doctor in Denver that they could come down but apparently was a little late for them to make it and so they're going to be watching the launch from Denver I'm amazed to hear you say Bruce that one of the Louisville children the one down here at the Cape has come down with measles I saw Maryland level last night I have not had the measles so I'm assuming that the command structure at CBS will remove me from the rest of this mission and turn it over to my backup man Wally schirra I just contacted the measles I guess well you've got to go through a few immunity tests and things like that first day kicking it out here Ron I wonder if Jack King might just possibly have the measles and that's whay and

[01:28:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=5280s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=5280s)

have the measles and that's whay and then on the air today well I saw him outside too so we're all down it's a it's a problem with the CBS News color coverage of the launch they have a bottle 13 will continue anymore this little girl isn't living in the same world you are virtually the entire environment in which she lives is disposable her blanket is made of con fil a nonwoven fabric from the International Paper Company soft pretty and it'll never have to be clean her sheets will never have to be laundered her pillow and pillowcase is disposable to when she's through with him we even make a diapers called flusher buys their smoothest cloth yet more absorbent when she's ready for fresh ones and she grows older she'll dispose of a paper crib too maybe then she'll be moving into a complete paperwork everything you see could be made by us the story of the disposable environment from the International Paper Company where good ideas grow on trees [Music] CBS News color coverage of the flight of Apollo 13 continues after station identification this is CBS

01:30:37 (https://www.youtube.com/watch?v=5mntGiDejBE&t=5437s)

[Applause] [Music] CBS news color coverage of Aquarius on the moon continues the flight of Apollo 13 sponsored by Western Electric the people who make telephones and communications equipment for the Bell System and by the International Paper Company where good ideas grow on trees here again is Walter Cronkite aquarius right now with 11 minutes before a launch is nestled comfortably we assume up there in the third stage of that three hundred and sixty foot high Saturn

01:32:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=5521s)

three hundred and sixty foot high Saturn rocket and it's a payload of the command module and the lunar module that Aquarius to be withdrawn from the third stage as the rocket speeds toward the moon later this afternoon the count now as you see less than 11 minutes for that launch somebody reminded me just a moment ago that there's another 13 in the series of 13s is surrounding this mission on that 24-hour clock through which the mission is timed at the Houston the manned Space Center which in the central time zone the time of launch comes out at 13-13 Central Standard Time and as long as we're adding to other information we've had here this morning it's Biloxi Mississippi earlier today I mentioned that Fred Hayes was from Biloxi and the people of Malacca pointed out it's Biloxi which it certainly is they seem to be right that's that shot from the similar the television color camera similar to the one that they're taking to the moon and very shortly now we expect a first on this space coverage for the first time the National Aeronautics and Space Administration is permitting a newsman into the launch control center as the launch takes place the man is an old colleague of ours a veteran of these launches Roy Neil he's with David Snell in the Mission Control Center David Snell's and Mission Control Houston first Roy Neal here at Maradona Houston it's a bright well lighted room filled with consoles painted in a light shade of grey Walter cream-colored and there are windows to the rear huge slanted windows through which people can see the launchpad three and a half miles away but most of the 500 people in this room won't watch that rocket they'll be too busy following the launch from console positions reading out data looking at black and white television from the 85

01:34:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=5640s)

black and white television from the 85 camera positions that monitor every critical phase of the Apollo 13 operation Houston concerns itself with the mechanics of space launch control concerns itself with the mechanics of space hardware and very soon now they'll find out how well their preparations succeed Roy Neil in launch control now - Dave Snell at Mission Control Houston just started falling the world as he does if all is well the men at the surrounding consoles will push nine buttons lighting nine green bulbs on the directors console that will mean very simply that from flight surgeon dr. Willard Hawkins to Rocket Man Bill Brady through Steve bales who attracts the tracking gear all is ready for the handoff from launch control at Cape Kennedy an added starter here in Mission Control is Ken Mattingly who had planned to spend this past hour on the launch pad astronaut Mattingly with a big smile and no sign of measles at all sat down next to capsule communicator Joe Kerwin who was greeting was sorry to see you here David Snell Mission Control Houston there are the engines which will be blasting the Saturn 5 off in seven minutes and 45 seconds from now a year and a half pounds of thrust out of each of those bells the outside ones gimbal that is they turn a little bit to help in the guidance procedures you know these Center ones are steady CBS news color coverage of the launch day of Apollo 13 will continue in a moment [Music] the hungry see it eats steel-plate almost anything made by man but on the floor of the ocean there's one thing spared from this ferocious appetite the transoceanic telephone cable every 10 miles of it there's an electronic relay station like

01:36:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=5761s)

there's an electronic relay station like this one made by man from Western Electric it's covered with beryllium copper and almost impervious to the corrosion and tremendous pressures of the sea inside are some 5,000 precision components that must operate for years without failure a manufacturing skill that would astonish jules verne helps to make transoceanic telephone service faster and more dependable Western Electric we make Bell telephones we also help keep the transoceanic telephone system off the menu of the hungry sea in six minutes from now you're going to see this subject through the weather and we do have that high haze layer at around 2,500 feet that may obstruct some of our view but ignition takes place you know what begins 9 seconds before the actual liftoff the hold down arms hold the rocket onto the launch pad until pressure is built up until I can take off then they fly away and after the zero hour T they first motion as the great spaceship we've seen in these other Apollo launches slowly begins to rise immediately it begins to turn just slightly yo it's called that goes on for about eight seconds and perhaps you will be able to see it as it just does that little bit of turning then it begins a that's that's a slight tilt and it rolls it begins to roll that goes on for another 20 seconds by that time there's just a half a minute going by and it's just barely getting up into the sky at that point then it's picking up speed of course very rapidly a minute after the launch it's reached three point seven miles it's about a mile and 15 hundredths downrange from us and it's now moving twelve hundred and fifty miles an hour just a few seconds after

[01:38:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=5880s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=5880s)

miles an hour just a few seconds after that you see that contrail as that builds up maximum dynamic pressure in in against the atmosphere that it's attempting to escape the altitude then is seven just about eight mile seven point nine eight miles it's three and a half miles downrange from us and it's up to seventeen hundred and eighty-three miles an hour now that's one minute 23 seconds into the flight two minutes and fifteen seconds into the flight the center engine of the first stage it cuts off a few oh not quite twenty-five seconds later the outboard engines cut off and then at two minutes and 45 seconds into the flight the first stage separates at that time the rocket is forty one 3/4 miles high and fifty nine miles downrange and going six thousand one hundred and fifty miles an hour but with the so called egor camera this a very long range camera which we've used in the past was denied to us on apollo 12 because of the heavy clouds we couldn't see anything and neither could the camera we have seen that separation actually take place as far away as it is 41 miles high and 60 miles downrange we can we've got a good look at it then at 2:00 right after that the second stage ignites and we see that as well if we've got good visibility the second stage is well the towers jettison first at 3 minutes and 20 seconds that's that launch escape tower off the top of the rocket it's due to come back and land out in the Atlantic or some six or seven minutes after that at at then let's see the the next is this is the second stage engine cutoff that comes seven minutes and 43 seconds into the flight the outboard engines cut off another minute and a half after that and then the separation of the second stage and then with the third stage they go into the

[01:40:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6000s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=6000s)

with the third stage they go into the earth orbit one and a half trips around the earth and then the third stage of the rocket fires two them on the trajectory toward the moon that comes about four hours into the flight later on in the afternoon after one and a half orbits of the earth the firing taking place out over the Pacific time now two and a half minutes before the launch of Apollo 13 test conductor Paul Donnelly is told the astronauts good luck head for the hills the automatic launch sequence has begun the computers have taken over and from here on out the countdown is automatic right toward the launch of course it can be called office while he knows even after those engines are fired we don't expect that we don't expect that no we designed that out in fact I have a lot to do with that particular design requirement really this indeed was a fire to have to go don't ought to mean it that way the malfunctioning occurred Oh plug pulled out and that caused the engine to shut down prematurely fortunately prematurely enough that we hadn't started to lift off at least we're gonna start listening now to Chuck Collins in the voice of Mission Control Morty Beyers like a stick on stage like what oxygen tank has been pressurized we'll be making our final transfer from external power source that is from the external power source at the pad to the launch vehicle batteries at the t-minus 50 second mark we'll be keeping an eye on that power transfer at t-minus 50 seconds the s4b propellants now all pressurize s4b propellants that's the third stage of the Saturn 5 pressurized one minute 15 seconds and counting the spacecraft equipment now is on its own internal cooling it's been sharing it's cooling from it getting it's cooling from an external power source up to this time we're now approaching the t-minus one minute mark t-minus one

01:42:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6121s)

t-minus one minute mark t-minus one minute and Counting today our countdown got quite a shake in 30 seconds sundown you're right interesting let's see if it was supposed to go past the t-minus 50 second mark the power transfer takes place first stage second stage third stage and the instrument unit going to internal power T - 37 seconds and our count continues to go well we'll be looking for an ignition of those five the first stage engines at the t-minus eight point nine second mark we passed t minus 30 t minus 25 seconds and counting and Apollo 13 is go t minus 20 seconds t minus 20 seconds and counting 17 guidance release 15 14 13 12 11 10 9 8 ignition sequence has started 6 5 4 3 we have commit and we have liftoff at 2:13 the saturn v building up to seven point six million pounds of thrust and it has cleared the tower it's a beauty it's another beauty I think while Malibu this time 13 Jews go in 30 seconds [Music] watching her for a long way down range

01:44:14 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6254s)

watching her for a long way down range one while we're still seeing it quite well through that haze all sources contain a report where go the trajectory on our plot boards is right on the pre-planned line it's that good one looks like a very good one there they see they lose right in their reports were now through the region of maximum dynamic pressure or go that's well your as you worry about is that maximum dynamic pressure because every bitter that outer surface is sensitive to this tremendous pressure that builds up due to the velocity in the atmosphere no that's probably the more traumatic period for training at least our genius standpoint one Charlie hit learning tasters overstate everything right on that time staging coming up that means the cutoff of the first stage I'm Jessie Jim Lovell reports the inboard engine has shut down as scheduled amazing a big booster is already history we confirm inboard out thirteen you're looking good it's due to a big booster splashes down and they up on thirty miles altitude splashes down in the Atlantic in about twenty minutes you can see ya there that's one of the static cameras they're rushing down you know thousands of gallons of water pour forth there to to cool and to put out any little fires that may have started are you seen Justin trajectories good

01:46:02 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6362s)

are you seen Justin trajectories good thrust is good Cespedes motion reminded people that was headed into nitrogen so we weren't waiting today that's the interstate confirm skirts up Roger Tower jet MOTU Jim looking good I see the launch tower off now they can look out to that blues protective cover those with that tower it's like a ice cream lingerie dangle top and as a result now the windows are all open to view this is the first few of them yes one small window the right thing like an eclipse to communicate with people outside the spacecraft were launched fantasies go communicate with visual signals I mean now all of a sudden or two guys are looking at that same beautiful view you've been hearing us and all talk about I think really is if you we're now at an altitude of 63 miles that boost cover is on there because the heat thumbs up on launch to 450 degrees and signal to go scores the windows yes that's exactly keep them clean no no another interesting thing that maybe not many people realize I can't remain our hands down at this point they go into Earth orbit right a heads back it's sort of like flying through the top of the loop as you go into orbit rather unusual attitude is it disturbing no no you become acclimated to it but there's quite surprised to me after having gone into orbit didn't mercury heads up I said well charity I went I love it heads on my side which is the full 182 heads down the first day 22 miles downrange now the econ reports about five minutes you're looking perfect over there Roger recon

01:48:02 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6482s)

looking perfect over there Roger recon reports that the cabin pressure is sealed at six point one communication is clear or now 250 miles downrange altitude 81 nautical miles but that first stage booster is gonna plop down the Atlantic about 400 2.5 miles I've got a pinpoint exactly yeah downrange from here and another 5 minutes shipping is been warned to stay out of the way after some of the funnel 11 parts dropped on a German ship up literally Atlantic 5/32 you look very good on me this for be like hollow 12 is no of its own it's just a little bit and it's resilient went in there is no but it's a way yeah yeah I don't think it'll drop in just now Roger you've got it bet this one girl isn't too happy that's camo Mission Control I put you in the park it's gonna be a bit low and start turning 416 I'm sure training 416 looking for Chuck Barry the docking Jim Houston we don't have a story on why the import out was early but the other engines are go and you're go hmm apparently had to early shut down on him but I'm sure he was talking the second stage or not actually a second stage is capable of compensating unless it was a very early oh yes yes that's the interesting thing in fact yeah it's like about 40 seconds still looking good your gimbals are good trim is good the prior tensions of the first stage of course it required to complete the total mission but if one of those fails at a certain point in time the other four can maintain the lift the delinquents new cut on time Niner +4 8 that's

[01:50:07 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6607s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=6607s)

cut on time Niner +4 8 that's affirmative and standby for us for B to orbit mark you have a square B door there now about a hundred over level and good engines on may cider in second stage we've shown altitude of 96 nautical miles 545 downrange that's a little over 600 statute miles downrange and each other's minutes 45 seconds booster reports we are go all four inches remaining looking good they early shut down the center action would cause no problem we would burn a little bit longer than normally sketches didn't look good at 8:00 but not busying bored of the second stage you know it just means you burn longer on the remaining four engine cleanly propelling the course of the available topic we just run it through forums in lieu of the fifth the fifth Internet shut down it's not wasting fuel in other words it's another shutdown now though they make it another bad day they would know the s4b might get them into orbit thirty guys look nuts or be capability all the thirteen used it mark level sent John Apollo 13 Houston at nine minutes you're go the CMC is go remarkably clear

[01:52:09 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6729s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=6729s)

go the CMC is go remarkably clear communications this is great because usually you hug hug when you got down here you can see otherwise they simply would he not exhaust and right back yes Aging's nothing I'll from his flight controller thirteen used and you aren't go for staging we show the staging there of the second stage I haven't had confirmations taking place actually yet probably be a little later than yeah hmm cuz the longer burn as you pointed out four engines zooming could promote for capability mark you know I could get into orbit live there okay that was fifty four children over two minutes now nineteen six almost forty seconds later there's a compensation which good but that that that puts them in the same altitude and velocity that they would well they're fine no problem at all no no this is all straightened out on this will be in all three CMC here I'll go game is a little happier to you know thirty seconds we are now 102 miles in altitude 1080 miles downrange this Earth orbit will be at 118 miles I thought everything is nominal and make the one and a half circuits of the of the earth before they fire that s4b are the the FPS for beat third stage put

[01:54:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6841s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=6841s)

are the the FPS for beat third stage put them into the trance lunar trajectory Houston at 11 minutes you're go predicted cutoff on the s4 B is 12 plus 3 4 over that's the longest burger that I can recall loss of stage so the whole timeline at least we're getting in the orbit is delayed now predicted cutoff time is 12 plus 3 4 over that's affirm it was predicted at 11 plus 46 so you know he there's quite a big difference percentage-wise that's very big one out of that kind of throw the whole timeline for the rest of the trip on 12 but it's still looking good no actually it shouldn't vary too much it'll change it slightly you're right to them but they've compensate for that when they make the tli burn they translunar injection burn that second be adapted for they might get a little earlier a little early it's more than likely really are yes because they're going downrange father same time zone they're not dragging so well today but they are getting where that fight out for a crew report a third stage shutdown and they're supposed to go into the insertion at 11:40 and haven't done so yet we go there we go 12 Nami Seco jam we're looking at the disk [Music] mr. Bob and the flight dynamics officer says at first glance we look good on the orbit confer might have reached orbital velocity 3,500 miles an hour what that

[01:56:11 (https://www.youtube.com/watch?v=5mntGiDejBE&t=6971s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=6971s)

velocity 3,500 miles an hour what that range is the the struck circuit has been shut off so there's no way now who they used to call propellant that's personal system which mean it blew up the boot dude we didn't exactly accept that term is still in bed yeah so as a result of that we'd like to have a signal sent by ground control to 13 years safe come here de haro destructor cos unless it emit my booster is safe huh we wouldn't get on if it weren't safe in the first place in this case I mean it's really safe so now they're in Earth orbit Congress that's the 51st as far as I ever major malfunction of any part of the pattern launch complex they both trajan error reporting protection a little operation we're standing by for confirmation from the flight dynamics officer of our preliminary orbit I think it's been absolutely spectacular where this booster has performed and there's an example of design that can pick up a malfunction and continue the mission which is really a key to a good deserving they're pretty busy up there right now they're checking out all of their systems another thing and they'll be doing that or that's all or but that's why one full Earth orbit before they then settle down and get ready for the translunar injection when the s4 be fast to fire and that's what they're doing is they're there I would like to describe it as buying the command module for a six-day trip and more another thing is this vehicle through these particular checks now in Earth orbit is meeting our requirements I'm simplifying a report all their information down here is one

[01:58:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=7080s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=7080s)

all their information down here is one out two point five times one point again everything is looking at the fourth time when the gym has been up their nose is the first for the whole bunch of it that's right first first man in the world to be launched for time yeah in the face he is the most experienced yeah that's not more time in space by far much he held the record immediately after in some of the seven place that did quite well to build up this tower thank you I have your Z torque and angle you ready Jax rubyconf you okay it's plus that's the mold to six over what are you talking I'll give you these are for the Jarl and they're actually getting the flesh one aligned to precise inertial reference system of course with a line in the launch pad you carry that reference system with you as you go into orbit now they're going to compensate and correct that you're getting the reformer oh I help you a lot they'll have the feeling I left you so much I'll seem reasonable no it's not like your attitude here consists of an airplane and here you use the initials rather than the earth because you're not really interested when the earth is anymore that's back so you allowing the attitude reference system to the star that's really it's not bad at all they use the fact that we have our eyes on the Stars we do in fact align this to a celestial pattern which is in relation to our source system a fixed reference there have no problem playing stars into the night side of the earth sufficient control 17 minutes we've had loss of signal with the spacecraft will be reacquiring shortly through the Canary

[02:00:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=7200s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=7200s)

reacquiring shortly through the Canary Island tracking station of the total burn duration on the third stage it was about 45 seconds longer than planned we would not expect at this point that this would have any serious effect on the translunar injection the fact that we did consume a bit more propellant out of the third stage than was originally planned we're standing by now for acquisition of signal through the Canary Island station we should be reacquiring radio contact with the spacecraft shortly CBS News color coverage of the launch day of Apollo 13 will continue in a month you are looking at the most unusual bridge ever built made entirely of paper for the International Paper Company [Music] the favored bridge was built to prove a point that paper is strong paper also can be made waterproof fireproof and of course paper is light and weight the paper bridge from the International Paper Company where good ideas grow on trees so Apollo 13 is well on the way in the first stage of this send a mission to the moon and back the launch was successful from the Kennedy Space Center here in Florida although one in a stage of the booster did cut out one engine

[02:02:02 (https://www.youtube.com/watch?v=5mntGiDejBE&t=7322s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=7322s)

of the booster did cut out one engine dip with a longer burn the remaining engines accomplished the job and the spacecraft Aquarius and the command module Odyssey are on their way in Earth orbit if everything now checks out in good shape there's plenty of propellant left in the s4 be a third stage we have been told by

Mission Control - on the second orbit of the earth as the spacecraft is over the Pacific washed it on its way to the moon so the world's most experienced astronaut gentlemen level a 42 year old native of Cleveland and a long time rather than the Milwaukee and is taking this spacecraft to the moon in his fourth flight into space and the first man to go twice to the moon he's got a total record number of hours in space 572 hours and 10 days that's almost 24 days he spent in space at the end of this 10-day mission he will have spent more than a month in space and that's by far longer than anybody else he was a co-pilot on Gemini 7 with Frank Borman and set a record right there with 14 days in his face and then the he was commander of Gemini 12 was that Aldrin flying along with him and he was command module pilot on Apollo 8 - with Foreman Anders that's Christmas Day circle of the moon let's look at the launch of Apollo 13 which we saw here some twenty minutes ago at the Kennedy Space Center and a beautiful launch it was on a day just it was in high five four three zero we have commit and we have liftoff at 2:13

[02:04:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=7441s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=7441s)

this is Mission Control Houston we appear to have a good for a stage at this point life dynamics officer says the trajectory looks good we show a 1/2 mile and altitude at this time their teen Justin go in 30 seconds Roger that stand by for mode 1 Bravo roll archive on the Kenai get them up for the right person orbit we do then it's normally in the routine hundred feet per second 13 Houston go at 1:00 we show the cabin relieving and at 1 minute 10 seconds we show an altitude of 4.1 nautical miles downrange one mile all sources continue to report we're go the trajectory on our plot boards is right on the pre-planned line and the booster engineer reports were now through the region of maximum dynamic pressure or go that was the picture we saw of the launch at 2:13 precisely as they got away on time with follow 13 and we just heard as we were watching that picture from Mission Control in Houston they realized contact with the spacecraft it came after having passed the Bermuda tracking station it was in the Canary Island area and they had a conversation with the Jim Lovell from

[02:06:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=7560s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=7560s)

conversation with the Jim Lovell from the ground told him that they still have not been pointed why one of those as for the engines and outboard engines cut off early but they had determined that they felt that it was an engine problem not in a switch somewhere and therefore presumably the engine will be not available to them on the lunar trajectory firing to come a little later this afternoon but so far Houston still believes that there should be no reason why there is enough power left there and fuel and so forth to get them into the trans lunar trajectory as that Benjen will be a fine to do so although 13 is well on the way I missed that conversation from the stern I think they probably were talking or if they should have been talking about the s2 engine shut down prematurely this will be is at one engine of course oh yeah that would compensate by burning longer as we saw and then decreased the fuel available for the trans Luna burn to get them in the way of the moon and also for correcting and they used that again you know to get into lunar orbit then of course to lower that orbit down to that very low parallel and then of course to leave the MOU which is quite significant when they come back so that engine has a big task ahead of it that's a service propulsion system engine which is which is on the service module of the command module and it's not one of the engines no that's right in fact they're gonna turn around after they get on the way the one with the s4v and look at it and see where she's headed mm-hmm it's a spore bee that is supposed to impact the moon 140 miles west of that Apollo 12 science station and still it's that big earthquake effect which will help the scientists make a determination perhaps as to what the moon's really made of whether they still not sure that green cheese is there somewhere under all about the old rock CBS news color covering to the launch day of Apollo 13 will continue in a month and this last

[02:08:06 (https://www.youtube.com/watch?v=5mntGiDejBE&t=7686s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=7686s)

will continue in a month and this last picture is a network of capacitors resistors diodes and a transformer gentlemen any questions this is a select group of people selected not for their education or experience but because they wanted an opportunity to improve themselves what they were selected for is one of Western electrics job training programs for the unemployed and the underemployed Western Electric builds and installs equipment for the Bell Telephone Network and that means training a lot of good people in Los Angeles Baltimore Chicago winston-salem Newark and other cities Western Electric we make bail telephones we also hire and train good people wherever they are whoever they are here you see a vice president Agnew and to his left to the right on our screen a Chancellor of any brunt of West Germany they've just arrived from outside into the launch control center here's dr. Thomas Paine the administrator of the National Space Agency ladies and gentlemen can hear me back there all right Otacon there you can see bus mossbacher who was a chef the protocol she will call the call of the State Department and as they tour guide for bill he brought of course and to his right to the left on your screen miss dr. Kurt Debus who is the director of the Space Center here Kennedy Space Center and here's vice president Agnew

[02:10:34 (https://www.youtube.com/watch?v=5mntGiDejBE&t=7834s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=7834s)

unfortunately we're having some problem with the audio from the launch control center not able to hear the words of vice president Agnew you know this is so typical of this great space-age wherein we just see off Apollo 13 and yet we haven't really worked up a PA system that works for someone they're trying to talk to his contemporaries he apparently they had trouble with the microphone up to the group they're in the launch control center and whatever they did to correct that situation cuz we could hear that I'm saying aha mm-hmm I think I need some help there Gazoo Morales a little low I think we can hear a little no not a barrel effective we can't really make out what he's saying I assure you this isn't a plot of the feet Eastern establishment we'd like

[02:12:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=7921s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=7921s)

the feet Eastern establishment we'd like very much to hear his words to the launch control team you'd like to hear the words have Billy brought afterwards to somebody there has cut off the medium bones favor the public address microphone I know that's the way it should be that's why he's there is to address the launch control people and forthing was they can hear now I got to watch to see if dr. Davis is smiling if he is and everything's all right well you know vice president Agnew has been a great booster for the space program if you remember in Apollo 11 he's sitting right here where where you are right there now while he talked for the first time as chairman of the president Space Committee about his commitment to the continuation of the space program and really it was a little more optic than it turned out the budget would permit all four going to Mars practically the next day well of course you recall the landers now as an executive secretary for the space Council and I did see billion bill said he's really enthused about this business we're somewhat disappointed that we couldn't afford as a nation Arion the rate of progress we had it established keep hoping that the older I get this microphone for got some audio out of there I see dr. Davis is smiling so I guess he's saying the right thing it's it is interesting this the Billy brought visit the first time any I German before a and yep this base program of the United States indeed that of the Russia was a great deal to these German scientists Kurt Debus was one of those from Wonder Boys the world you know one to be in the the it on the

[02:14:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=8041s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=8041s)

know one to be in the the it on the Baltic Germans developed the ones and two and so of course are so many others in the in the best space program including the Pat your think maybe we have audio from there now return to our national attention to and I can assure you that we appreciate that very much again it's a pleasure to be with you and congratulations again on an outstanding accomplishment [Applause] yeah I now introduce his Excellency the Chancellor of West German the president I just wanted to say that I feel honored and deeply grateful to have been invited to the launching of Apollo 13 here and to have this opportunity not only to extend my personal but wishes products successful journey to the astronauts but also come to congratulate all those of you those who are here and many others in this great country we have prepared and are actively involved in this project this is already the fifth time that men are about to leave I have left as a matter of fact for the moon but this for that no less daring and undertaking and no less exciting to anyone who had the privilege

[02:16:02 (https://www.youtube.com/watch?v=5mntGiDejBE&t=8162s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=8162s)

exciting to anyone who had the privilege of watching it in Germany and I'm sure in all of Europe people will follow this trip with the same keen interest and the same emotions as everybody in the United States you here gentlemen together with all your colleagues indeed are going in peace for all mankind and on behalf of all my countrymen I with wish that this not only will be a successful trip and a safe return but further progress for mankind thank you [Applause] we in the American space program very much appreciate your kind words we would like to give you a memento of your visit to Cape Kennedy to witness the launch of Apollo 13 we thought that a Saturn 5 rocket would be the appropriate memento but it was too large to fit in your airplane so we have a somewhat smaller version here which we hope that you will take with you as a reminder of the successful launch of Apollo 13 [Applause] [Music]

[02:18:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=8281s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=8281s)

ken Mattingly wishes he'd take the German measles back to well yeah actually he himself he had no responsibility for those measles no the East German because this German trolley great you know it's awfully hard to scale down at Saturn five and even then when you do as a model as you see here it's a very very large memento of a visit to the Cape you know there's a funnel down Huntsville at the Marshall Space Center there what makes these models I've got a whole model room to make them and they're handmade the good ones I mean really fine however said that do some marvelous toy models too but but the the hand-sculpted ones are really magnificently done I was presented one of these one B of course which was a smaller version of this for Apollo seven slider it really is one of my greatest treasures I imagine if you had to buy one in the open market made like these are made you'd run into the thousands of dollars that's another example of devotion by the way the craftsman that makes those models I have met him in fact does most of this in his own time it's just working away just like a real horse I could think of his name so we could give him credit here cuz Lee is Marla's fellow and a great guy maybe we'll make a note to ourselves and say something about it later on in the broadcast Apollo 13 is now on the far side of the earth it's it's that is over the Indian Ocean should be about this time isn't that right Wally yeah I think that's pretty good it's not it's about right I don't have a chart right in front of me but they've been at night for a while too of course now they're in the night side and they're on the way to the next contact at carnival Australia in Harbin yes and we'll be back with more on the flight of Apollo 13 in a moment consider the egg

[02:20:06 (https://www.youtube.com/watch?v=5mntGiDejBE&t=8406s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=8406s)

Apollo 13 in a moment consider the egg nature's perfect package [Music] International Paper Company improves on nature with packages they protect a whole lot better as a package the egg as other limitations you can't see what's inside but you can't see into some international paper packages and you can even hang them up for sale international paper can put a product on a pedestal and even tell its story and of course with international paper makes packages that come out uniform in fact you can say that international paper makes a better package in every way except perhaps one [Music] the International Paper Company where good ideas grow on trees well Wally we saw a beautiful launch this morning and the early afternoon I guess it is now and it's nice to have these launches in the afternoon nice civilized hour everybody sleeps in late even the astronauts didn't get up late 58 or something pretty casual day wasn't it is it still traumatic as far as watching that launch goes I never have become that easygoing and I can avoid having wet palms or feel my pulse go up particular is an observer I feel it more as an observer than I ever did being in the vehicle itself really well tell me if we were on saying something earlier about maximum dynamic pressure and I know in mercury days with the Atlas booster you got a buffeting at max Q oh we went through that same point in space if I may describe the way that Monsieur much more rapidly in because it's so much lighter system and we if you recall we got into orbit and mercury in about five minutes here it took 12 minutes to

[02:22:00 (https://www.youtube.com/watch?v=5mntGiDejBE&t=8520s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=8520s)

five minutes here it took 12 minutes to get into orbit so you can see that the vehicle is mixto rating as rapidly so it max Q Li which is the maximum dynamic pressure really means the combination of velocity and atmosphere is such that you have the greatest push back if I can describe the way along the vehicle surface any rough areas that are not streamlined pick up a vibration and then they the Dennison tower causes it in the as an aerodynamic effect which causes this terrible buffeting it was quite quite severe in Mercury's contrasted to this vehicle this one isn't severe no no it's still there and it's a it's a dangerous mode in a sense of our launch abort rules where if you have a great malfunction that causes the vehicle to go out of control it tends to break up rather rapidly and this maximum dynamic pressure so once it gets out of its streamlined path the vehicle tends to break and a half and there's not much time to just before you get into it if any chance you got out of out of your trajectory in anyway you being serious right so you really think yourself exactly like that that's really a bad one that's kind of fun we mentioned something about the fact that over Australia I was privileged to visit there just recently about three weeks ago and was asked well how did you like your trip down here and it took me something like two flights to get there in the total about 16 hours I said I enjoyed it but in the old days it only took me 45 minutes and here they are of course over Australia do the people of Australia have been very close to the space program I remember on Glenn's flight the people of Perth lit up the city the first really big thing he saw worth the trip around there really a great tribute of course and we do when we leave the States as always a dark because we have a day launch here and you just go around the world halfway and it has to be night on one side yeah the we might explain again what happened this morning because I think there was some confusion perhaps communicated by me on precisely what happened on this launch the second

[02:24:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=8641s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=8641s)

what happened on this launch the second stage of the booster after the first stage it dropped away someone asked me and found thrust of that first stage getting up now you got the second stage and in the second stage you've still got five engines for around on the rim and one in the center they're developing two hundred thousand horse thrust pounds thrust each and in that second stage the center engine went out suddenly cut off early you know the premature cutoff is the technical term right shut down sure and it shut down that left only for these eight hundred thousand pounds of thrust instead of a million pounds of thrust with that they compensated by burning that engine a little bit those four engines that were longer to get the speed and the altitude that they wanted now they also when they dropped away that second stage with the thursday's the s4b they burned it 10 seconds longer it turns out now we've got that figure 10 seconds longer to now compensate completely except for the time line there on that but other everything else is as it would have normally been except there is 10 seconds less fuel in the s4b but it has a margin of fuel in it certainly much much greater than we have to compensate that engine is needed to put the command module and the service module and the lunar module into the France lunar trajectory on the way to the moon there's no reason to believe that it's not in good shape and quite capable of doing the job as Houston has told us now so Apollo 3rd 13 is well on the way a beautiful launch as we have seen from here at the Kennedy Space Center this morning and the gym level Fred Hayes and Jack Swagger sitting in for Ken Mattingly as the command module pilot they are on their way to the moon

[02:26:01 (https://www.youtube.com/watch?v=5mntGiDejBE&t=8761s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=8761s)

pilot they are on their way to the moon the fifth trip to the moon for man the third to make a landing they will go into that trance lunar flight at 448 this afternoon Eastern Standard Time and it's now three minutes to 3:00 Eastern Standard Time so they have got an hour and almost two hours now 55 minutes before they do go into that translunar injection burn the s4b engine and start flying out toward the moon itself their scheduling a color television transmission perhaps if they get everything else done from Earth orbit which will be recorded and shown later today CBS news coverage of the flight of Apollo 13 continues later today on the CBS Evening News with Roger Mudd the suborder Cronkite with Wally schirra at the CBS News a Space Center at the Kennedy Space Center in Florida [Applause] [Music] this has been CBS news color coverage of Aquarius on the moon flight of Apollo 13

[02:28:02 (https://www.youtube.com/watch?v=5mntGiDejBE&t=8882s)](https://www.youtube.com/watch?v=5mntGiDejBE&t=8882s)

Aquarius on the moon flight of Apollo 13 sponsored by the International Paper Company where good ideas grow on trees and by Western Electric the people who make telephones and communications equipment for the Bell System next Apollo update on the CBS Saturday news this is CBS

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